

## AMENDMENTS TO THE SPECIFICATION

Please replace Paragraph [0012] with the following paragraph rewritten in amendment format:

[0012] Referring to Figure 2 3, an initialization method of the present invention is illustrated. Upon engine start, Block 130 is executed, initializing the variables used by the adaptive threshold logic as follows: the variable Running\_on\_all\_cylinders is set to TRUE, the variable First\_pass\_reac is set to FALSE, the variable First\_pass\_deac is set to TRUE, and the variable Time\_in\_deac is set to zero.

Please replace Paragraph [0013] with the following paragraph rewritten in amendment format:

[0013] Referring to Figure 3 4, the adaptive threshold logic of the present invention is executed following the completion of the standard threshold detection logic described in US Serial No. 10/104,111, which is hereby incorporated by reference in its entirety. The method begins at block 100, which determines whether the system is Running\_on\_all\_cylinders. If block 100 is false, then the ICE 12 is operating in the “deactivated” or partially displaced operating mode and block 102 is executed. If block 100 is true, then the ICE 12 is operating in the “reactivated” or fully displaced operating mode and block 116 is executed. At block 102, the variable Time\_in\_deac, representing the time spent in a deactivated mode, is incremented by the sampling rate of the present method (Ts) in the controller 18. Following block 102, block 104 is executed to determine whether this is the first pass/execution of the method since the ICE 12 entered a deactivated mode. If block 104 is false, block 124 is executed and the

method is exited; otherwise, if block 104 is true, block 106 is executed. At block 106, the variable Time\_between\_deacs, representing the time between deactivations, is calculated as the difference between the current time as read from a hardware timer/clock in the ECU, and the time of the last deactivation. Following block 106, block 108 is executed and the variable last\_deac\_time, representing the last deactivation time, is set to the run\_time from the controller 18 hardware. Following block 108, block 109 is executed, block 109 sets the flags First\_pass\_reac to TRUE and First\_pass\_deac to FALSE so as to be able to detect the first pass or execution of the method after the ICE 12 enters the reactivated mode. Following block 109, block 110 is executed to determine if the Time\_between\_deacs is less than a calibrated threshold, Deac\_time\_deac\_thresh. If block 110 is false, block 124 is executed and the method is exited; otherwise, block 112 is executed. In block 112 the variable Deactivation\_threshold, representing the torque value or vacuum level at which the standard threshold detection logic switches from fully displaced mode to partially displaced mode, is decremented by the precalibrated amount Deactivation\_delta\_cal.

Please replace Paragraph [0015] with the following paragraph rewritten in amendment format:

[0015] Returning to the start of the method of Figure 3 4, if block 100 is true, then the ICE 12 is in a reactivated mode and block 116 is executed. Block 116 determines if this is the first pass or execution of the present method since the ICE 12 entered a reactivated mode. If false, block 124 is executed and the method is exited. Block 116 determines if the flag First\_pass\_reac is true, indicating that this is the first time the ICE

12 has been reactivated to operate in a fully displaced mode. If block 116 is true, then block 118 is executed. Block 118 determines if the output of block 102 (Time\_in\_deac) is greater than a calibrated variable, Deac\_time\_inc\_thresh. If block 118 is false, block 124 is executed and the method is exited; otherwise, if block 118 is true, block 120 is executed. At block 120, the variable Deac\_threshold is incremented by the calibration variable Reactivation\_delta\_cal. This calibration value is set to be a relatively small fraction of the calibration variable Deactivation\_delta\_cal\_ used in block 112.